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Integrating the SharePoint 2007 Adapter with WebCenter Spaces (11.1.1.3.0 & 11.1.1.4.0)



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Introduction

Oracle WebCenter Spaces is a Web-based application built using the Oracle WebCenter Portal Framework that offers the very latest technology for social networking, communication, collaboration, and personal productivity. Out-of-the-box, WebCenter Spaces integrates with Oracle Universal Content Management (UCM) to provide built-in content management, document collaboration, and storage capabilities on a Space-by-Space basis. While the primary document repository for WebCenter Spaces is always Oracle UCM, Oracle WebCenter's support for the JCR 1.0 open content repository standard enables integration with multiple back-end content stores, including Microsoft SharePoint.

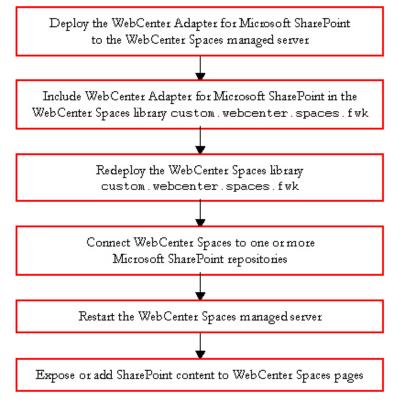
This whitepaper describes how to deploy the *Oracle WebCenter JCR Microsoft SharePoint 2007 Adapter* in a WebCenter Spaces installation and how to configure and use content management task flows to read, write, and search documents stored in a Microsoft SharePoint repository.

WebCenter Spaces supports the following Microsoft SharePoint 2007 versions:

- ... Microsoft Office SharePoint Server (MOSS) 2007 SP2
- ... Microsoft Windows SharePoint Services (WSS) version 3 SP2

Overview

Microsoft SharePoint 2007 integration with WebCenter Spaces requires the following steps:



The whitepaper describes each step in detail. The examples use Linux file system commands but equivalent Windows commands can also be used.

To perform these steps, you must to be able to:

- ... Use the Oracle WebLogic Server Administration Console for the domain running WebCenter Spaces.
- ... Copy custom.webcenter.spaces.fwk.ear from its deployed location, modify EAR content on your file system, and recreate the EAR.
- ... Use the Java jar tool.

Adding WebCenter Adapter for Microsoft SharePoint to WebCenter Spaces

This section describes how to extend the WebCenter Spaces custom.webcenter.spaces.fwk library to include the WebCenter Adapter for Microsoft SharePoint. The main steps are as follows:

- 1. Deploy WebCenter Adapter for Microsoft SharePoint to the WebCenter Spaces managed server.
- 2. Copy, modify, and rebuild the WebCenter Spaces library custom.webcenter.spaces.fwk.
- 3. Redeploy the WebCenter Spaces library custom.webcenter.spaces.fwk.

Deploying Oracle WebCenter Microsoft SharePoint Adapter

The first step is to deploy Microsoft SharePoint 2007 adapter files to the WebCenter Spaces managed server.

- 1. Log in to the Oracle WebLogic Server Administration Console for the domain.
 - The console URL is: http://hostname:port_number/console
- 2. Under **Domain Structure**, click **Deployments**.
- 3. In the Control tab, under Deployments, click Install.



4. In the Install Application Assistant section, click **the upload your file(s)** link.



5. In the **Upload a Deployment to the admin server** section, use the **Browse** button to locate the WebCenter Adapter for Microsoft SharePoint EAR file, oracle.webcenter.content.jcr.sharepoint.ear, and then click **Next**.

WebCenter Adapter for Microsoft SharePoint is available as follows:

- ... 11.1.1.4.0 Available on the Oracle WebCenter Companion DVD in the ofm_wc_generic_jcr_sharepoint_adapter_11.1.1.4.0.zip file.
- ... 11.1.1.3.0 Available on the Oracle WebCenter Adapters DVD in the ofm_wc_generic_jcr_sharepoint_adapter_11.1.1.3.0.zip file.

Extract the ZIP file to a temporary location and you will find the adapter files in the <TEMP_LOCATION>/WebCenter/services/content/adapters directory.

A message indicates that the file uploaded successfully.

```
Messages

The file oracle.webcenter.content.jcr.sharepoint.ear has been uploaded successfully to /scratch/work/AS11/mwHome/user_projects/domains/wc3_domain /servers/AdminServer/upload
```

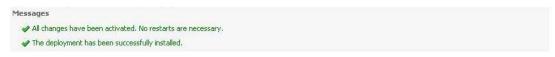
- 6. Still in the Install Application Assistant, with the uploaded WebCenter Adapter for Microsoft SharePoint EAR file shown as the **Path**, click **Next**.
- 7. On the next screen, accept the default **Install this deployment as a library**, and click **Next**.
- 8. Select the managed server on which your WebCenter Spaces application is deployed, and then click Next.

The managed server name depends on your WebCenter Spaces version:

- ... WLS_Spaces WebCenter Spaces 11.1.1.3.0
- ... WC_Spaces WebCenter Spaces 11.1.1.4.0
- 9. Click **Finish** to complete the deployment.

You do not need to change any default values.

A message indicates that the WebCenter Adapter for Microsoft SharePoint deployed successfully.



Rebuilding custom.webcenter.spaces.fwk Library

The next step is to modify and then rebuild the WebCenter Spaces custom.webcenter.spaces.fwk library.

1. In your file system, create a temporary directory called stage.

In the next step this directory is referred to as <STAGE>.

2. Copy the custom.webcenter.spaces.fwk.ear to the stage directory:

```
cp
<ORACLE_HOME>/webcenter/modules/oracle.webcenter.spaces_11.1.1/custom.webcenter.
spaces.fwk.ear <STAGE>
```

3. Create a tmp directory under stage and extract custom.webcenter.spaces.fwk.ear into the tmp directory:

```
mkdir <STAGE>/tmp

cd <STAGE>/tmp

jar -xvf ../custom.webcenter.spaces.fwk.ear
```

4. Create an updated manifest file for the EAR.

This updates the library version and ensures that the original EAR is not overwritten when the library is redeployed.

a) Move the extracted MANIFEST.MF file.

It is important to move (and not just copy) this file, that is, there must not be a MANIFEST.MF under <STAGE>/tmp/META-INF when the JAR is rebuilt. The moved file must be renamed as follows:

```
cd <STAGE>/tmp/META-INF
mv MANIFEST.MF <STAGE>/manifest.mf
```

b) Edit the <STAGE>/manifest.mf file, increasing the **Implementation Version** and removing the Manifest-version, Ant-Version, Created-By entries.

Warning: The Implementation Version *must* be greater that the current version. If it is not increased, the existing EAR is overwritten on redeployment.

Out-of-the-box, the Implementation Version is 11.1.1. If this is the first time you have extended custom.webcenter.spaces.fwk, Oracle recommends that you include the WebCenter Spaces version when you increment the Implementation Version. For example, use the format 11.1.1.3.n or 11.1.1.4.n where n is one greater than the existing value. Here is an example of manifest.mf (11.1.1.4) modified for the first time:

```
Implementation-Title: Oracle WebCenter Spaces App Extension Model
Extension-Name: custom.webcenter.spaces.fwk
Package:
Specification-Version: 11.1.1
Implementation-Version: 11.1.1.4.1
Implementation-Label: WORKPLACE_11.1.1.4.0_GENERIC_101223.1848
Implementation-Vendor: Oracle
Implementation-Patch-Number:
Implementation-Patch-List:
```

Note: For your environment you may need to use a greater Implementation Version, for example, 11.1.1.3.2 or 11.1.1.4.2.

5. Include a library reference for WebCenter Adapter for Microsoft SharePoint in the file META-INF/weblogic-application.xml.

If this is the first time custom.webcenter.spaces.fwk.ear has been modified you must create a new weblogic-application.xml file from scratch under the META-INF directory and add all the code below. If the file exists, then you only need to add the library-ref> element and its enclosed elements as highlighted here:

Redeploying custom.webcenter.spaces.fwk Library

The next step is to redeploy custom.webcenter.spaces.framework.ear modified in the previous step.

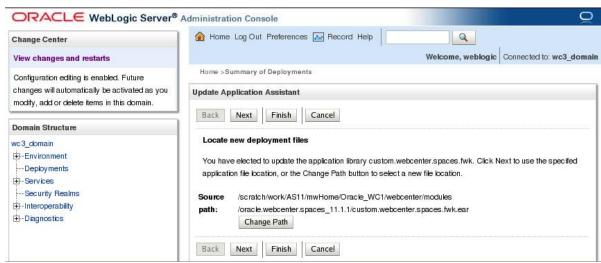
- 1. Log in to the Oracle WebLogic Server Administration Console for the domain running WebCenter Spaces.
- 2. Shut down the WebCenter Spaces managed server before redeploying the library.

<?xml version = '1.0' encoding = 'US-ASCII'?>

Note: If you do not shut down the managed server, redeployment will fail.

- 3. Under **Domain Structure**, click **Deployments**.
- 4. In the **Control** tab, select the check box next to the **custom.webcenter.spaces.fwk** library entry, and then click **Update**.

The Update Application Assistant displays.



- 5. Click Change Path and when the Locate new deployment files page displays, click the upload your files(s) link.
- 6. In the **Upload a Deployment to the admin server**, click **Browse** and select the library you rebuilt earlier, that is, <STAGE>/custom.webcenter.spaces.fwk.ear.

A message displays when the file uploaded successfully.



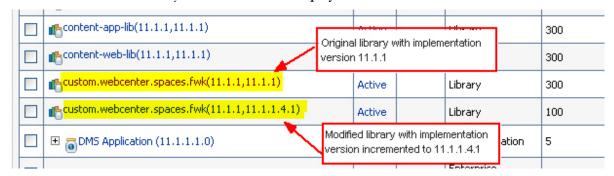
7. Click **Next** twice.

The **Review your Choices** page shows the updated Implementation Version that you set when rebuilding the library.



8. If the information displayed is correct, click **Finish** to redeploy custom.webcenter.spaces.fwk.ear.

Note both versions of the library are now listed under **Deployments**.



9. Restart the WebCenter Spaces managed server.

WebCenter Spaces now uses your modified version of the custom.webcenter.spaces.fwk.ear that includes the WebCenter Adapter for Microsoft SharePoint library.

Connecting WebCenter Spaces to a Microsoft SharePoint Site

Now that WebCenter Spaces contains the required library files (for WebCenter Adapter for Microsoft SharePoint) you can connect WebCenter Spaces to one or more Microsoft SharePoint sites. Connections to SharePoint sites are managed using WebLogic Scripting Tool (WLST) commands.

Note: You cannot manage Microsoft SharePoint connections through Fusion Middleware Control.

This section describes:

- ... Installing WLST Command Scripts for Managing Microsoft SharePoint Connections
- ... WLST Commands for Managing Microsoft SharePoint Connections
- ... Example 1: Connecting to a Microsoft SharePoint Repository with Shared and Public Credentials using WLST
- ... Example 2: Connecting to a Microsoft SharePoint Repository with Mapped Credentials using WLST

Important: The *default* or *primary* content repository for WebCenter Spaces must be Oracle UCM. You cannot configure Microsoft SharePoint as the primary content repository that WebCenter Spaces uses to store Space-related documents.

Installing WLST Command Scripts for Managing Microsoft SharePoint Connections

WLST commands for managing Microsoft SharePoint connections must be installed manually. For details, refer to "Installing WLST Command Scripts for Managing Microsoft SharePoint Connections" in Administrator's Guide for Oracle WebCenter available from OTN at:

http://download.oracle.com/docs/cd/E17904_01/webcenter.1111/e12405/wcadm_documents.htm#WCADM9759.

WLST Commands for Managing Microsoft SharePoint Connections

Refer to the Administrator's Guide for Oracle WebCenter for information about configuring WebCenter Spaces using WLST:

- ... To run WLST commands, see Section 1.13.3.1, "Running Oracle WebLogic Scripting Tool (WLST) Commands" http://download.oracle.com/docs/cd/E17904_01/webcenter.1111/e12405/wcadm_intro.htm#WCADM1705
- ... For WLST command syntax, see Section 11.13, "Managing Microsoft SharePoint Connections Using WLST" http://download.oracle.com/docs/cd/E17904_01/webcenter.1111/e12405/wcadm_documents.htm#WCADM9752

Example 1: Connecting to a Microsoft SharePoint Repository with Shared and Public Credentials using WLST

To enable everyone to access content, create a connection with predefined credentials (shared and/or public) for the SharePoint site. Use this type of connection to enable access to content that is targeted to all users. To restrict access to specific users, create a SharePoint connection that requires mapped credentials (see Example 2 in the next section).

Use the following example to connect WebCenter Spaces to a SharePoint site using shared and public credentials.

1. Create an external application connection. For example:

```
wls:/mydomain/serverConfig>createExtAppConnection(appName='webcenter',name='mossExtApp')
Created connection "mossExtApp"
```

2. Configure shared and public credentials for the external application:

```
wls:/mydomain/serverConfig>addExtAppCredential(appName='webcenter',name='mossExtApp',type
='PUBLIC',username='MOSS\\spviewer',password='mypassword')
Enabled PUBLIC credential for external application mossExtApp successfully
wls:/mydomain/serverConfig>addExtAppCredential(appName='webcenter',name='mossExtApp',type
='SHARED',username='MOSS\\spmember',password='mypassword')
```

Enabled SHARED credential for external application mossExtApp successfully.

- 3. Create a SharePoint connection that uses the external application configured with shared/public credentials:
 - ... All authenticated WebCenter Spaces users connect to the SharePoint site on the given URL using shared credentials
 - ... Guest users, that is, unauthenticated WebCenter Spaces users, use public credentials.

wls:/wc3_domain/serverConfig>createJCRSharePointConnection(appName='webcenter',name='moss
Conn',url='http://my_moss',extAppId='mossExtApp',isPrimary=0)

Created connection "mossConn".

4. Restart the managed server on which WebCenter Spaces is deployed.

WebCenter Spaces now has a connection to the SharePoint site.

Example 2: Connecting to a Microsoft SharePoint Repository with Mapped Credentials using WLST

Use the following example to connect WebCenter Spaces to a SharePoint site using mapped credentials. With mapped credentials, SharePoint credentials are mapped to WebCenter Spaces credentials on a per-user basis. The WebCenter Adapter for Microsoft SharePoint does not support identity propagation, however, using mapped credentials, individual users are prompted to enter their own SharePoint credentials to access content.

Using this type of connection, only users with their own SharePoint account can access content.

1. Create an external application connection. For example:

```
wls:/mydomain/serverConfig>createExtAppConnection(appName='webcenter',name='spExtApp')
Created connection "spExtApp".
```

2. Create a SharePoint connection that uses the external application connection. For example:

```
wls:/mydomain/serverConfig>createJCRSharePointConnection(appName='webcenter',name='spsCon
n',url='http://my_sps',extAppId='spExtApp')
Created connection "spsConn".
```

3. Restart the managed server on which WebCenter Spaces is deployed.

WebCenter Spaces now has a connection to the SharePoint site.

Adding Microsoft SharePoint Content to WebCenter Spaces

Once connected to a Microsoft SharePoint site, users can expose SharePoint content in WebCenter Spaces through content management task flows. The following sections show you how to:

- ... Add an image to a page
- ... Add the Folder Viewer task flow to a page

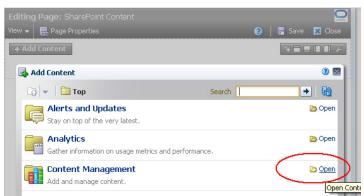
Note: You cannot use the Content Presenter task flow to display content in a SharePoint repository. The Content Presenter task flow only displays content stored in Oracle UCM.

Example1: Adding an Image to a Page

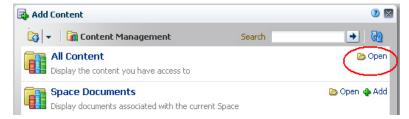
Follow these steps to add an image stored in a SharePoint repository to a page in WebCenter Spaces.

- 1. Create a new page, using the **Create Page** option or open an existing page.
- 2. Open the page in edit mode, using the **Edit Page** option.
- 3. Click the **Add Content** link to show the Catalog.

4. Expand Content Management (click Open).



5. Expand All Content (click Open).



6. The catalog lists all content repository connections. For example:



7. Click **Open** next to the connection you want to use.

The catalog only displays connections to content repositories accessible to you.

- ... SharePoint connections configured with shared/public credentials, such as **mossConn**, are available to everyone and always display.
- ... SharePoint connections that require mapped credentials, such as **spsConn**, only display if your WebCenter Spaces/SharePoint credentials are mapped.
- 8. Open the folders until you locate the image file that you wish to use.

In this example: /sp:Site/sp:RootWeb/sp:Lists/Shared Documents/sp:Files/images

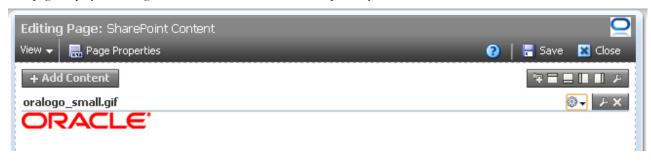
9. Click the **Add** link next to the image.

10. Choose **Image** from the display options displayed.



11. Click Close.

The page displays the image retrieved from the SharePoint repository.



12. (Optional) Ensure Cache-Control response settings are correct.

See the next section "Setting the Cache-Control Response Header".

Setting the Cache-Control Response Header

The example above shows how to display content that is stored in a SharePoint repository, on a page in WebCenter Spaces. By default, WebCenter Spaces instructs the browser to check whether the content is up to date before a cached copy, if available, is displayed in the browser. For content that is known to be *static* or does not change frequently, such as the image added in Example 1 above, such checks incur an unnecessary performance overhead.

Content caching is controlled by a Cache-Control: max-age=0 response header for the file. You can override the default setting by editing the Web Tier mod_wl_ohs configuration file (mod_wl_ohs.conf).

The following example, defines a rule that replaces the Cache-Control header for all content in the /images folder:

1. Edit mod_wl_ohs.conf:

<WebTier_ORACLE_HOME>/instances/instance1/config/OHS/ohs1/mod_wl_ohs.conf

- 2. Add a **Location** rule for a SharePoint images folder, ensuring that it is matched before the Web Tier's rule that matches all WebCenter content:
 - # Change cache-control response for WebCenter images. Must be matched ahead of webcenter location.

<Location "/webcenter/content/conn/mossConn/path/sp:Site/sp:RootWeb/sp:Lists/Shared
Documents/sp:Files/images/">

SetHandler weblogic-handler

WeblogicHost myhost.myorg.com

WeblogicPort 8888

Header set Cache-Control "max-age=8640000"

</Location>

<Location /webcenter>

SetHandler weblogic-handler

WeblogicHost myhost.myorg.com

WeblogicPort 8888

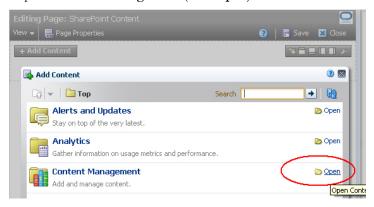
</Location>

Example 2: Adding the Folder Viewer Task Flow to a Page

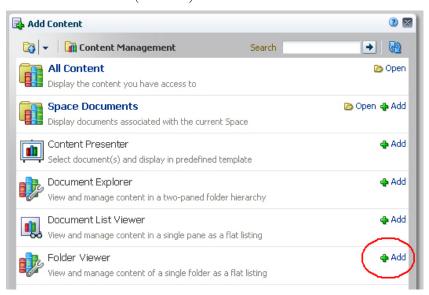
If you are using WebCenter Spaces 11.1.1.4, follow these steps to add the Folder Viewer task flow to a page. The Folder Viewer task flow enables you to browse SharePoint folder content from WebCenter Spaces.

Note: If you are using WebCenter Spaces 11.1.1.3, add the Document Manager task flow instead.

- 1. (Optional) Create a new page, using the Create Page option.
- 2. Open the page in edit mode, using the **Edit Page** option.
- 3. Click the **Add Content** link to show the Catalog.
- 4. Expand Content Management (click Open).



5. Choose **Folder Viewer** (click **Add**).



6. Click Close.

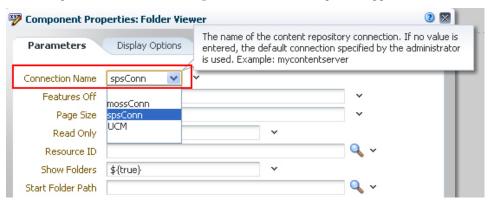
By default, all Content Management task flows expose content in WebCenter Spaces default content repository.

7. Click the **Edit** icon to specify that the task flow display content from a Microsoft SharePoint repository.



8. From the Parameters tab, select the Connection Name you want to use.

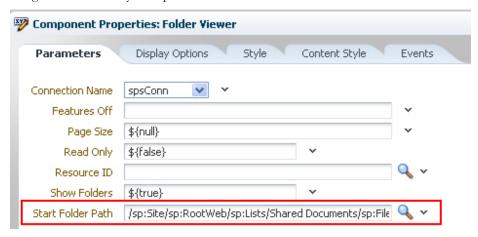
This example illustrates how to configure a task flow that requires mapped SharePoint credentials (spsConn).



9. (Optional) Enter a **Start Folder Path** for the SharePoint document library.

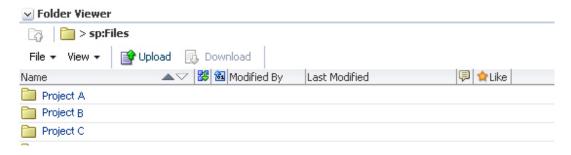
For example: /sp:Site/sp:RootWeb/sp:Lists/Shared Documents/sp:Files

If your WebCenter Spaces credentials are not yet mapped to the SharePoint site you cannot use the **Browse** option to navigate to the folder you require.



10. Click **OK**.

Folder content displays if your WebCenter Spaces credentials are mapped to SharePoint credentials. For example:



Folder content does not display if your credentials are not yet mapped to the SharePoint site. Instead, the following message displays:



To log in to the SharePoint site and map WebCenter Spaces/SharePoint login credentials, click the link displayed and enter your SharePoint credentials in the External Application Login dialog. If the **Remember my login information** checkbox is selected, you do not have to re-enter SharePoint credentials next time you log in to WebCenter Spaces and visit this page.



Removing Microsoft SharePoint Extensions for WebCenter Spaces

If you want to remove all WebCenter Spaces extensions relating to Microsoft SharePoint, follow these steps:

- 1. Ensure that no pages in WebCenter Spaces rely on Microsoft SharePoint connections.
- 2. Use the WLST command deleteConnection to delete existing Microsoft SharePoint connections and any associated external application connections.
- 3. Stop the managed server on which WebCenter Spaces is running.
- 4. Using Oracle WebLogic Server Administration Console for the domain:
 - a. Do one of the following:
 - ... Undeploy (delete) the latest, updated version of the custom.webcenter.spaces.fwk library.
 - Do this step if the *only* extension included in this version is the Microsoft SharePoint library and the previous version of the library is still deployed. If a previous version is not deployed, you cannot remove Microsoft SharePoint extensions this way.
 - ... Rebuild the custom.webcenter.spaces.fwk library, increasing the implementation version by 1 again, but this time **removing** the library reference for oracle.webcenter.content.jcr.sharepoint in weblogic-application.xml. Once rebuilt, redeploy this latest custom.webcenter.spaces.fwk library version.
 - The instructions for rebuilding and redeploying custom.webcenter.spaces.fwk are provided earlier in the whitepaper. For details, see "Rebuilding custom.webcenter.spaces.fwk Library" and "Redeploying custom.webcenter.spaces.fwk Library".
 - b. Undeploy Oracle WebCenter Adapter for Microsoft SharePoint library oracle.webcenter.content.jcr.sharepoint.
- Restart the WebCenter Spaces managed server.

Troubleshooting

Cannot see SharePoint connections in Fusion Middleware Control

Use the WebLogic Scripting Tool (WLST) to manage SharePoint content repository connections. To see a list of SharePoint connections, use the WLST command listJCRSharePointConnections.

For this release, you cannot use Fusion Middleware Control to manage SharePoint connections.

Cannot create SharePoint connections in Fusion Middleware Control

Use the WebLogic Scripting Tool (WLST) to manage SharePoint content repository connections. To create a SharePoint connection, use the WLST command createJCRSharePointConnection.

For this release, you cannot use Fusion Middleware Control to manage SharePoint connections.

WLST help command does not list SharePoint connection commands

If you are using Oracle WebCenter 11.1.1.3, WLST command line help is not available for SharePoint WLST commands. For help with WLST command syntax, refer to "Section 11.13, "Managing Microsoft SharePoint Connections Using WLST" in the *Administrator's Guide for Oracle WebCenter* available from OTN at: http://download.oracle.com/docs/cd/E17904_01/webcenter.1111/e12405/toc.htm.

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